



# Using *xfig* to draw pictures



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## 1. Should I use *xfig*?

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The *xfig* utility is a program for drawing diagrams and figures.

Use the *xfig* program if:

- You want something you can learn quickly.
- You are producing relatively simple diagrams or maps.
- You need figure output in Encapsulated PostScript, *.gif*, *.jpg*, or other graphic form.

Don't use *xfig*:

- If you need strict dimensional control; try AutoCad or EasyCAD.
- If you need to manipulate images; try Photoshop.

## 2. How to use *xfig*

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1. Login to a Linux workstation.
2. Bring up the X Window environment if it is not already up.
3. Type the command

```
xfig name.fig&
```











where **name** is the name of a file where you want this picture saved. For example, if you are producing a flow diagram of a rock crusher, you might call it **crusher.fig**.







4. If you want a reference grid to appear in the drawing area to help you position things, click on the *Grid mode* button at the bottom. A popup menu will appear; click on one of the three grid densities or *None*.
5. Click on one of the *Drawing modes* icons on the upper left side. The various drawing modes are described below; the current mode is always highlighted.
6. Move your mouse into the main drawing area. The small menu labeled *Mouse Buttons* in the top right corner will always tell you what the mouse buttons do in the current drawing mode.
7. Add, change, or delete items from your figure by using the various drawing mode icons or the *Editing modes* icons on the lower left side. Some options for each mode may be set by clicking on the icons along the bottom (e.g., Zoom Scale).
8. When you are finished, or whenever you want to save the current figure, move the mouse to the *File...* button on the top button bar and click the right button ("Save Shortcut").
9. To exit *xfig*, click on the *Quit* button in the top left corner.

### 3. Adding objects to your drawing

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Here is a quick description of each of the *Drawing modes* icons on the top left side. The best way to learn what they do is to try them out. Remember that the *Mouse buttons* panel in the top right corner will always tell you what the mouse buttons do, and that a right-click will always quit out of the current operation.

-  Draw a circle by defining the center and a point on the circle.
-  Draw a circle by defining two ends of a diameter.
-  Draw an ellipse by defining the center and one corner of the bounding box.
-  Draw an ellipse by defining two corners of the bounding box.
-  Draw a closed curve by defining the enclosing polygon.
-  Draw a free curve that fits a polyline.
-  Draw a closed curve by defining points on the curve.
-  Draw a free curve passing through a set of points.
-  Draw an arbitrary polygon.
-  Draw a polyline, that is, a series of line segments connected end-to-end. A single line segment is just a polyline with only two points.

-  Draw a rectangle by defining two opposite corners.
-  Draw an oval inscribed in a rectangle.
-  Draw a regular polygon.
-  Draw a circular arc defined by three points.
-  Include a .gif image (*Picture object*).
-  Add textual annotation (large letter T).

## 4. How to change line styles and other options

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In most drawing modes, icons will appear at the bottom of the screen that can be used to set color, line width, and many other parameters. Click on the icon to pop a menu that allows you to make such changes.

For example, many drawing modes allow you to set the line width:

1. Click on the *Line width* icon on the bottom of the screen.
2. A popup menu will appear. Move the cursor into the text field labeled *Value*. Use the *Backspace* key to remove the old line width (usually 1). To get a double-width line, type 2, or use larger values for wider lines.
3. Click on the *Set* button.

Changing the line width will only affect objects created after that point. To change the options of objects you have already created, see *Modifying objects* below.


## 5. Editing your drawing

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Elements of your drawing may be modified using the *Editing modes* icons on the lower left side.

### 5.1. Grouping

The first icon is used to combine objects into groups that can be operated on as a whole. For example, if you have a row of boxes, you can weld them into a group by these steps:

1.  Click on the grouping icon (under *Editing modes*). ``Handles'' (little boxes) will appear on the screen for each object.
2. Tag the objects you want to group: left-click on the handle of each you want to group.  
You can also tag all the objects in an area by this procedure: center-click above the upper left corner of the items; then drag the mouse to a position below and to the right of the items, and center-click again.
3. Once you have tagged the items in your group (and their handles have turned solid), right-click to form the group.

You can now move and copy the group as a single item.



To break a group back into its component objects, use the "break compound" icon.

## 5.2. Moving objects



To move an object or group:

1. Click on the *Move* icon. Handles will appear on all objects.
2. Left-click on the handle of an object to start moving it.
3. Drag the handle to its new position.
4. Left-click again to place the object.


If you want to move the object either straight up, straight down, straight left, or straight right, substitute a center-click for the left-click in the step 2 above.

## 5.3. Copying objects



Copying is just like moving, except that after step 4 there will be a completely new object at the new position, and the old object will still be there.


## 5.4. Removing objects

1.  Click on the *Delete* icon.
2. To remove an object, place the cursor on one of that object's handles and left-click.

## 6. Modifying objects

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To change almost any attribute of an existing object:

1.  Click on the *Edit* icon.
2. Click on a handle of the object you want to change.
3. A menu will appear showing you all the attributes of the object. To change a field, move the cursor into that field.
4. To see how the object will look after changes, click on the *Apply* button.
5. To commit changes, click on *Done*.

## 7. Printing your figure

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To get a hardcopy of your drawing:

1. Click on the *Export* button on the top button bar.

2. A popup menu will appear. Move the cursor to the *Language* pull-down menu, press and hold the left mouse button, drag to select the output file format you want, and release the left mouse button. Common choices include "encapsulated PostScript", "JPEG", and "GIF."
3. Move the cursor to the *Output filename* text field and type the name for your file, e.g., something like `crusher.gif` or `org.eps`.
4. Click on the *Export* button and *xfig* will write the file you named in the language that you selected.